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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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EXAMINER

HARRY, ANDREW T

| ART UNIT | PAPER NUMBER |
|----------|--------------|
| 2683 | 5 |

DATE MAILED: 06/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|----------------------------|----------------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 09/651,754 | CAMPBELL, MICHAEL E. |
| | Examiner Andrew T Harry | Art Unit 2683 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 06 May 2003.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-22 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-22 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 03 August 2000 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.

4) Interview Summary (PTO-413) Paper No(s). _____.

5) Notice of Informal Patent Application (PTO-152)

6) Other: _____

DETAILED ACTION

Response to Arguments

Applicant's arguments filed May 5, 2003 have been fully considered but they are not persuasive.

The Applicant has changed claims 1, 14 and 19 to include the limitation that a plurality of **bi-directional** transceivers are present in the instant invention. The Examiner questions the meaning of "bi-directional" transceiver. Transceivers, as typically defined in the art, are apparatus that allow a communications device to both transmit and receive radio frequency (RF) signals. Therefore a transceiver is inherently a "bi-directional" device as it both transmits and receives wireless RF signals.

The Applicant further asserts that, "the multifunction slice 100 includes a number of transceivers 106-122. The transceivers provide both transmit and receive functionality and may be programmed to do so over a wide frequency range." The portion of the instant invention described above fails to include the processor 124, and only includes the transceiver functionality that takes place before the signal reaches the processor stage. *Phillips* teaches these identical features in his invention with a number of transceivers 107 that provide both transmit and receive functionality over a wide frequency range (see *Phillips*, Fig. 3, and col. 17 line 21-col. 18 line 3).

The Applicant then states that "the output from antenna preconditioners 218-224 may be routed to one of several slices 234, each slice 234 including a plurality of transceivers 106-112." The slices, as described by the Applicant, perform the processing of the received and transmitted signal before the signal reaches the processor 226 of the instant invention. *Phillips*' RF switch

module 306 performs the tasks of the “slices” as described by the instant invention (see *Phillips*, Fig. 3, and col. 17 line 21-col. 18 line 3).

The final distinction claimed by the Applicant is that “the output from a plurality of the antenna preconditioners 410-416 may be switched directly between a number of transceivers in the system 400.” This is a functionality that is also taught by *Phillips* (see *Phillips*, Fig. 3, and col. 16 line 45-col. 17 line 20).

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1- 22 are rejected under 35 U.S.C. 102(e) as being anticipated by *Phillips et al U.S. Patent 6,072,994* (“*Phillips*”).

As pertaining to **claim 1**, *Phillips* teaches a transceiver-processor building block for an electronic radio system multifunction “slice” (based on the language in the specification, the examiner interprets slice to simply mean a grouping of radio resources), the building block comprising (see *Phillips*, abstract):

a plurality of **bi-directional** transceivers (see *Phillips*, Fig. 3 and col. 15 lines 55-63);
a processor coupled to the transceivers (see *Phillips*, Fig. 3 and col. 15 lines 55-63);
a local RF control bus 326 inaccessible directly from outside the multifunction slice and coupled between the processor and the transceivers (see *Phillips*, Fig. 3 and col. 28 lines 15-36);
a radio network bus coupled to the processor 324 (see *Phillips*, Fig. 3); and

a radio network bus connector coupled to the radio network bus to provide direct accessibility to the radio network bus from outside the multifunction slice (see *Phillips*, Fig. 3, on the right of the figure *Phillips* shows various applications connected to the bus that may be used to provide access to the multifunction slice).

As pertaining to **claim 2**, *Phillips*' block further comprises an external control bus coupled to the processor and an external control bus connector providing direct accessibility to the external control bus from outside the radio resources (see *Phillips*, Fig. 3, on the right of the figure *Phillips* shows various applications connected to the bus that may be used to provide access to the multifunction slice).

As pertaining to **claim 3**, in *Phillips*' building block the external control bus carries antenna configuration data that may be relevant in reconfiguring the antenna interface unit (AIU) (see *Phillips*, Fig. 3 and col. 26 lines 49-61).

As pertaining to **claim 4**, in *Phillips*' building block the external control bus carries antenna interferometer configuration and beamforming data (see *Phillips*, Fig. 3 and col. 26 line 37-col. 27 lines 35, *Phillips* describes that based on the type of application being used the AIU must change various signal transmission parameters).

As pertaining to **claim 5**, in *Phillips*' building block the radio network bus transfers transmission coordination data and voice and user data into and out of the building block (see *Phillips*, Fig. 3, col. 22 lines 33-61 and col. 26 line 37-col. 27 lines 35).

As pertaining to **claim 6**, in *Phillips*' building block the local RF control bus carries tuning data for the plurality of transceivers (see *Phillips*, col. 26 lines 49-61).

As pertaining to **claim 7**, in *Phillips*' building block the local RF control bus carries intermediate frequency bandwidth information and intermediate frequency gain characteristics for the plurality of transceivers (see *Phillips*, col. 26 line 37-col. 28 line 7).

As pertaining to **claim 8**, in *Phillips*' building block the radio network bus carries unencrypted information and is isolated from the local RF control bus (see *Phillips*, Fig. 3, it can be clearly seen in Fig 3 of *Phillips* that all information submitted through the network bus 324 passes through INFOSEC modules and isolated from the RF control bus).

As pertaining to **claim 9**, in *Phillips*' building block the radio network bus is isolated from the RF control bus with electromagnetic shielding (see *Phillips*, Fig. 3 and col. 33 lines 33-47).

As pertaining to **claim 10**, in *Phillips*' building block the processor includes encryption and decryption support 314, 318, etc. for each transceiver in the plurality of transceivers (see *Phillips*, Fig. 3 and col. 42 lines 12-22).

As pertaining to **claim 11**, in *Phillips*' building block the processor includes multilevel security software to control the routing of data (see *Phillips*, col. 43 lines 5-14 and col. 45 line 17-col. 46 line 61).

As pertaining to **claim 12**, *Phillips*' building block also includes encryption and decryption circuitry coupled to the processor for each transceiver in the plurality of transceivers (see *Phillips*, Fig. 3 and col. 45 line 17-col. 46 line 61).

As pertaining to **claim 13**, in *Phillips*' building block the local RF control bus carries control data from the processor to the transceivers (see *Phillips*, Fig. 3 and col. 27 lines 45-63).

As pertaining to **claim 14**, *Phillips* teaches a radio system multifunction “slice” (based on the language in the specification, the examiner interprets slice to simply mean a grouping of radio resources) for supporting a predetermined number of communication threads (see *Phillips*, abstract), the multifunction slice comprising:

an RF aperture switch/transmitter interface 306 (see *Phillips*, Fig. 3);

a plurality of **bi-directional** transceivers 308 coupled to the RF aperture switch/transmitter interface 306 (see *Phillips*, Fig. 3 and col. 15 lines 55-63);

a processor coupled to the transceivers 310, 312, etc. (see *Phillips*, Fig. 3 and col. 15 lines 55-63);

a local RF control bus 326 inaccessible directly from outside the multifunction slice and coupled between the processor, the transceivers, and the RF aperture/transmitter interface (see *Phillips*, Fig. 3 and col. 28 lines 15-36);

a radio network bus coupled to the processor 324 (see *Phillips*, Fig. 3); and

a radio network bus connector coupled to the radio network bus to provide direct accessibility to the radio network bus from outside the multifunction slice (see *Phillips*, Fig. 3, on the right of the figure *Phillips* shows various applications connected to the bus that may be used to provide access to the multifunction slice).

an avionics interface coupled to the processor, the avionics interface providing a core avionics network output and a core avionics network input (see *Phillips*, Fig. 8 and col. 60 lines 26-60).

As pertaining to **claim 15**, *Phillips*’ slice further comprises an external control bus coupled to the processor and an external control bus connector providing direct accessibility to

the external control bus from outside the radio resources (see *Phillips*, Fig. 3, on the right of the figure *Phillips* shows various applications connected to the bus that may be used to provide access to the multifunction slice).

As pertaining to **claim 16**, in *Phillips*' radio slice the local RF control bus is restricted to carrying control data information between the processor, the transceivers, and the RF aperture switch/transmitter interface (see *Phillips*, Fig. 3 and col. 26 lines 10-15).

As pertaining to **claim 17**, in *Phillips*' slice the radio network bus carries unencrypted information and is isolated from the local RF control bus (see *Phillips*, Fig. 3, it can be clearly seen in Fig 3 of *Phillips* that all information submitted through the network bus 324 passes through INFOSEC modules and isolated from the RF control bus).

As pertaining to **claim 18**, in *Phillips*' slice the radio network bus transfers transmission coordination data (see *Phillips*, Fig. 3 and col. 26 line 37-col. 27 lines 35, *Phillips* describes that based on the type of application being used the AIU must change various signal transmission parameters), and user data into and out of the building block (see *Phillips*, Fig. 3, col. 22 lines 33-61 and col. 26 line 37-col. 27 lines 35), and the local RF control bus carries tuning data for the plurality of transceivers (see *Phillips*, col. 26 lines 49-61), and carries intermediate frequency bandwidth information and intermediate frequency gain characteristics for the plurality of transceivers (see *Phillips*, col. 26 line 37-col. 28 line 7).

As pertaining to **claim 19**, *Phillips* teaches a method for operating a transceiver-processor building block in an electronic radio system multifunction slice, the method comprising:
providing a plurality of **bi-directional** transceivers coupled to a processor (see *Phillips*, Fig. 3 and col. 15 lines 55-63);

communicating unencrypted data to the processor over a radio network bus coupled to the processor (see *Phillips*, col. 45 lines 38-51), the radio network bus coupled to a radio network bus connector providing direct accessibility to the radio network bus from outside the multifunction slice (see *Phillips*, Fig. 3 and col. 47 lines 15-37);

processing the unencrypted data to form encrypted user data and control data (see *Phillips*, col. 46 lines 7-61); and

communicating the control data to the transceivers over a local RF control bus between the processor and the transceivers 326(see *Phillips*, Fig. 3 col. 26 lines 49-61), the local RF control bus inaccessible directly from outside the multifunction slice, and communicating the user data to the transceivers over bi-directional baseband interfaces (see *Phillips*, Fig. 3, col. 22 lines 33-61).

As pertaining to **claim 20**, *Phillips* ' method further comprises the step of communicating antenna configuration data over an external control bus coupled to the local RF control bus to an antenna outside the multifunction slice (see *Phillips*, col. 26 line 49-col. 27 line 35).

As pertaining to **claims 21 and 22**, *Phillips* ' method further comprises the step of electrically isolating the network bus from the local RF control bus with electromagnetic shielding (see *Phillips*, Fig. 3 and col. 33 lines 33-47).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew T Harry whose telephone number is 703-305-4749. The examiner can normally be reached on M-F 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on 703-308-5318. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

ATH
June 9, 2003



WILLIAM TROST
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

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